

Application No.: 09/900,766

Docket No.: HO-P02188US0

AMENDMENTS TO THE CLAIMS

Claims 1-106 (Canceled)

107. (Currently Amended) A conjugate comprising a bacterial superantigen and an antibody moiety, wherein

the superantigen is a variant of Staphylococcal enterotoxin E, reference SEQ ID NO: 7, and differs from Staphylococcal enterotoxin E in ~~comprising~~ having amino acid substitutions as follows, wherein the positions of the amino acid substitutions are relative to the amino acid positions in reference SEQ ID NO: 7:

(i) amino acid position 20 is glycine or a conserved variant thereof, amino acid position 21 is threonine or a conserved variant thereof, amino acid position 24 is glycine or a conserved variant thereof, amino acid position 27 is lysine or a conserved variant thereof, and amino acid position 227 is serine ~~or a conserved variant thereof~~ or alanine, or a conserved variant thereof; and

(ii) wherein at least one amino acid in a region C is substituted with a different amino acid, such that the superantigen variant has reduced seroreactivity compared to the seroreactivity of Staphylococcal enterotoxin having the amino acid sequence of SEQ ID NO: 7, and the position of the amino acid substitution in region C is selected from the group consisting of amino acid positions 74, 75, 78, 79, 81, 83 and 84;

and wherein the antibody binds 5T4 cancer antigen ~~moiety is a full length antibody, or a molecule binding antibody active fragment, that is directed against a cancer-associated cell surface structure.~~

108. (Currently Amended) The conjugate of claim 107, wherein the antibody binds 5T4 cancer antigen on a cancer ~~said cancer is~~ selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.

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109. (Currently Amended) The conjugate of claim 108, wherein the cancer is lung eelen cancer and the antibody moiety is C215Fab.
110. (Currently Amended) The conjugate of claim 108, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment ~~cancer is lung cancer and the antibody moiety is 5T4Fab~~.
111. (Currently Amended) The conjugate of claim ~~107~~10, wherein the conjugate comprises ~~has the amino acid sequence of~~ SEQ ID NO: 1.
112. (Previously Presented) The conjugate of claim 107, wherein the substitution at amino acid position 227 is alanine.
113. (Previously Presented) The conjugate of claim 107, wherein the substitution at amino acid position 227 is serine.
114. (Currently Amended) The conjugate of claim 107, wherein the superantigen variant further comprises an amino acid substitution in a region E, wherein at least one amino acid in the region E is substituted with a different amino acid, such that the variant has reduced seroreactivity compared to the seroreactivity of Staphylococcal enterotoxin having the amino acid sequence of SEQ ID NO: 7, and the position of the amino acid substitution in region E is selected from the group consisting of amino acid positions 217, 220, 222, 223, 225 and 227.
115. (Currently Amended) The conjugate of claim 114, wherein the superantigen variant comprises ~~has the amino acid sequence of~~ SEQ ID NO: 2.
116. (Currently Amended) The conjugate of claim 114, wherein the antibody binds 5T4 cancer antigen on a cancer ~~said cancer is selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer~~.
117. (Currently Amended) The conjugate of claim 116, wherein the cancer lung eelen cancer and the antibody moiety is C215Fab.

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118. (Currently Amended) The conjugate of claim 114~~6~~, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment~~cancer is lung cancer and the antibody moiety is 5T4Fab.~~
119. (Previously Presented) The conjugate of claim 107, wherein the substituted amino acid in region C comprises an amino acid selected from the group consisting of threonine or a conserved variant thereof at position 74, alanine or a conserved variant thereof at position 75, serine or a conserved variant thereof at position 78, glutamic acid or a conserved variant thereof at position 79, glutamic acid or a conserved variant thereof at position 81, serine or a conserved variant thereof at position 83, serine or a conserved variant thereof at position 84.
120. (Currently Amended) The conjugate of claim 119, wherein the antibody binds 5T4 cancer antigen on a cancer~~said cancer is~~ selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.
121. (Currently Amended) The conjugate of claim 120, wherein the cancer is lung colon~~cancer and the antibody moiety is C215Fab.~~
122. (Currently Amended) The conjugate of claim 120, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment~~cancer is lung cancer and the antibody moiety is 5T4Fab.~~
123. (Canceled)
124. (Previously Presented) The conjugate of claim 114, wherein the substituted amino acid in region E comprises an amino acid selected from the group consisting of threonine or a conserved variant thereof at position 217, serine or a conserved variant thereof at position 220, threonine or a conserved variant thereof at position 222, serine or a conserved variant thereof at position 223, and serine or a conserved variant thereof at position 225.
125. (Canceled)

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126. (Currently Amended) The conjugate of claim 124, wherein the antibody binds 5T4 cancer antigen on a cancer ~~said cancer is selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.~~
127. (Currently Amended) The conjugate of claim 126, wherein the cancer is lung colon cancer ~~and the antibody moiety is C215Fab.~~
128. (Currently Amended) The conjugate of claim 126, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment ~~cancer is lung cancer and the antibody moiety is 5T4Fab.~~
129. (Currently Amended) A ~~pharmaceutical composition comprising the conjugate of claim 107 and a carrier in an aqueous medium, and a conjugate comprising a bacterial superantigen and an antibody moiety, wherein~~

~~the superantigen is a variant of Staphylococcal enterotoxin E, reference SEQ ID NO: 7, and differs from Staphylococcal enterotoxin E in having amino acid substitutions as follows, wherein the positions of the amino acid substitutions are relative to the amino acid positions in reference SEQ ID NO: 7:~~

~~(i) amino acid position 20 is glycine or a conserved variant thereof, amino acid position 21 is threonine or a conserved variant thereof, amino acid position 24 is glycine or a conserved variant thereof, amino acid position 27 is lysine or a conserved variant thereof, and amino acid position 227 is serine or a conserved variant thereof or alanine or a conserved variant thereof; and~~

~~(ii) wherein at least one amino acid in a region C is substituted with a different amino acid, such that the variant has reduced seroreactivity compared to the seroreactivity of Staphylococcal enterotoxin having the amino acid sequence of SEQ ID NO: 7, and the position of the amino acid substitution in region C is selected from the group consisting of amino acid positions 74, 75, 78, 79, 81, 83 and 84;~~

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~~and wherein the antibody moiety is a full length antibody, or a molecule-binding antibody active fragment, that is directed against a cancer-associated cell surface structure.~~

130. (Currently Amended) The composition ~~conjugate~~ of claim 129, wherein the antibody binds ST4 cancer antigen on a cancer ~~said cancer is~~ selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.
131. (Currently Amended) composition ~~conjugate~~ of claim 130, wherein the cancer is lung colon cancer and the antibody moiety is C215Fab.
132. (Currently Amended) The composition ~~conjugate~~ of claim 130, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment ~~cancer is lung cancer and the antibody moiety is ST4Fab.~~
133. (Currently Amended) The composition ~~conjugate~~ of claim ~~12932~~, wherein the conjugate comprises ~~has the amino acid sequence of~~ SEQ ID NO: 1.
134. (Currently Amended) The composition ~~conjugate~~ of claim 129, wherein the substitution at amino acid position 227 is alanine.
135. (Currently Amended) The composition ~~conjugate~~ of claim 129, wherein the substitution at amino acid position 227 is serine.
136. (Currently Amended) The composition ~~conjugate~~ of claim 129, wherein the superantigen variant further comprises an amino acid substitution in a region E, wherein at least one amino acid in the region E is substituted with a different amino acid, such that the variant has reduced seroreactivity compared to the seroreactivity of Staphylococcal enterotoxin having the amino acid sequence of SEQ ID NO: 7, and the position of the amino acid substitution in region E is selected from the group consisting of amino acid positions 217, 220, 222, 223, 225 and 227.
137. (Currently Amended) The composition ~~conjugate~~ of claim 136, wherein the superantigen variant comprises ~~has the amino acid sequence~~ SEQ ID NO: 2.

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138. (Currently Amended) The composition ~~conjugate~~ of claim 136, wherein the antibody binds 5T4 cancer antigen on a cancer ~~said cancer is~~ selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.
139. (Currently Amended) The composition ~~conjugate~~ of claim 138, wherein the cancer is lung colon cancer ~~and the antibody moiety is C215Fab~~.
140. (Currently Amended) The composition ~~conjugate~~ of claim 138, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment ~~cancer is lung cancer and the antibody moiety is 5T4Fab~~.
141. (Currently Amended) The composition ~~conjugate~~ of claim 129, wherein the substituted amino acid in region C comprises an amino acid selected from the group consisting of threonine or a conserved variant thereof at position 74, alanine or a conserved variant thereof at position 75, serine or a conserved variant thereof at position 78, glutamic acid or a conserved variant thereof at position 79, glutamic acid or a conserved variant thereof at position 81, serine or a conserved variant thereof at position 83, serine or a conserved variant thereof at position 84.
142. (Currently Amended) The composition ~~conjugate~~ of claim 141, wherein the antibody binds 5T4 cancer antigen on a cancer ~~said cancer is~~ selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.
143. (Currently Amended) The composition ~~conjugate~~ of claim 142, wherein the cancer is lung colon cancer ~~and the antibody moiety is C215Fab~~.
144. (Currently Amended) The composition ~~conjugate~~ of claim 142, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment ~~cancer is lung cancer and the antibody moiety is 5T4Fab~~.
145. (Canceled)
146. (Currently Amended) The composition ~~conjugate~~ of claim 136, wherein the substituted amino acid in region E comprises an amino acid selected from the

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group consisting of threonine or a conserved variant thereof at position 217, serine or a conserved variant thereof at position 220, threonine or a conserved variant thereof at position 222, serine or a conserved variant thereof at position 223, and serine or a conserved variant thereof at position 225.

147. (Canceled)
148. (Currently Amended) The composition conjugate of claim 146, wherein the antibody binds ST4 cancer antigen on a cancer said cancer is selected from the group consisting of lung, breast, colon, kidney, pancreatic, ovarian, stomach, cervix and prostate cancer.
149. (Currently Amended) The composition conjugate of claim 148, wherein the cancer is lung colon cancer and the antibody moiety is C215Fab.
150. (Currently Amended) The composition conjugate of claim 148, wherein the antibody comprises a full length antibody or an antigen-binding antibody fragment cancer is lung cancer and the antibody moiety is ST4Fab.
151. (New) The composition of claim 130, wherein the carrier is aqueous.
152. (New) The composition of claim 130, wherein the composition is lyophilized.
153. (New) The composition of claim 132, wherein the carrier is aqueous
154. (New) The composition of claim 133, wherein the carrier is aqueous.
155. (New) The composition of claim 133, wherein the composition is lyophilized.
156. (New) The composition of claim 136, wherein the carrier is aqueous.
157. (New) The composition of claim 137, wherein the carrier is aqueous.
158. (New) The composition of claim 137, wherein the composition is lyophilized.
159. (New) The composition of claim 144, wherein the carrier is aqueous.